



E OWNER'S MANUAL

7000

The Minolta 7000 uses computer technology to bring fascinating new dimensions to your photography. From key control to centralized data display, every aspect of the 7000 is designed for easy operation and outstanding results.

Among its major features are: ▷ High-tech autofocus for precise, instant sharpness with the full range of new Minolta AF lenses. ▷ LCD data panels on top and in viewfinder for maximum information in each mode. ▷ Auto multi-program mode that automatically sets an AE program to match the actual focal length in use—with unique program shift to tailor each for special needs. ▷ Aperture- and shutter-priority modes plus metered manual for total flexibility. ▷ Auto film control for loading, automatic film speed setting with DX-coded films, single-frame or continuous advance at up to two frames per second, plus power rewind.

Advanced new accessories include: ▷ The Program Flash units with AF assist for autofocus in low light or total darkness, TTL metering in all modes, and a new auto fill-flash program. ▷ The Program Back 70 that makes data imprinting, intervalometer operation, and long exposures easier than ever. ▷ Minolta AF lenses which already range from 24mm wideangle to 300mm f/2.8 Apo tele and include five lightweight macro-zooms. ▷ User-changeable focusing screens, wireless remote controls, eyepiece correctors, etc., fill out the growing system.

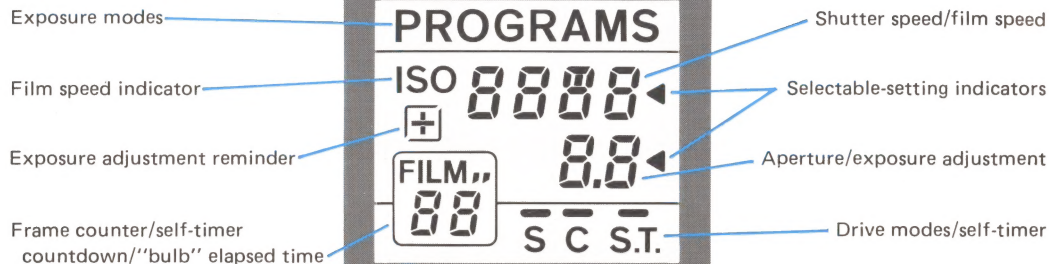
Before using your 7000, carefully read this manual. As you do, attach the lens, load batteries, switch on power, and learn about the camera's parts and features. Then load it with film and proceed to actual picture-taking. Be sure to follow the instructions and notes, and keep this manual handy for further reference. This way you can get better pictures and take full advantage of the many advanced features built into your Minolta 7000.

Fold out the front and back covers of this manual for easy reference to names of parts.

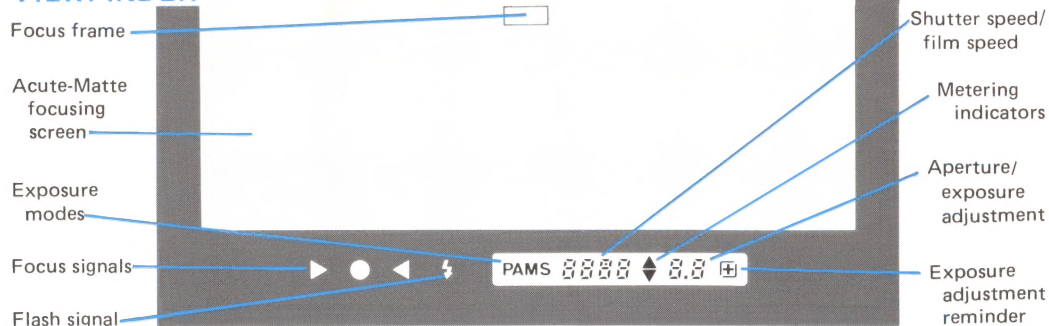
NAMES OF PARTS



DATA PANEL



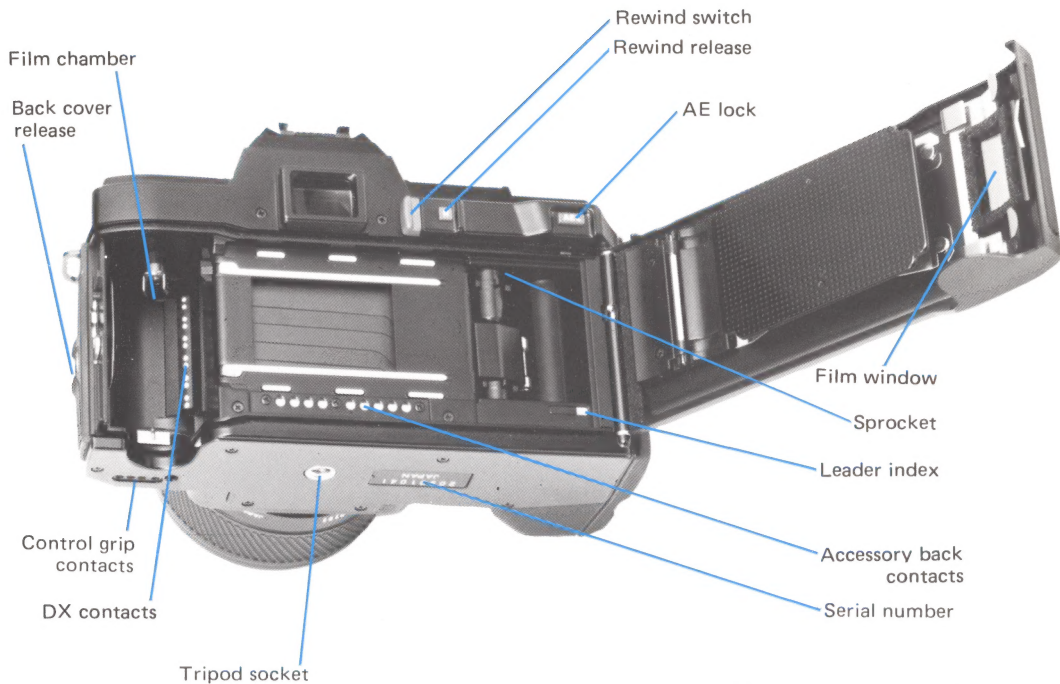
VIEWFINDER



NOTE

While all possible displays are shown together here, only applicable displays appear during operation.

NAMES OF PARTS



(See also front fold-out.)

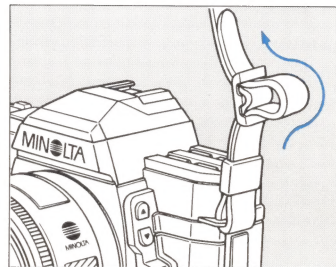
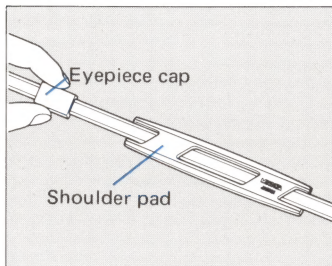
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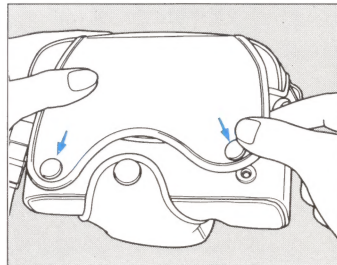
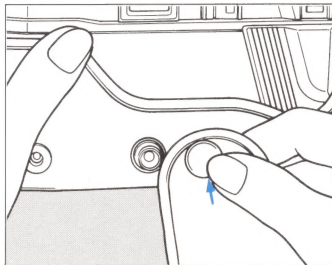
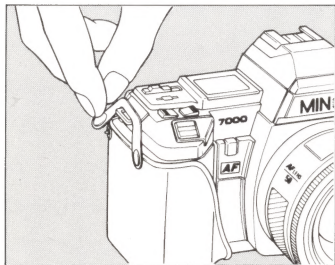
*Basic information on photo principles and techniques

STRAP AND CASE

Attach the strap (supplied with camera) and case (optionally available) as shown. The eyepiece cap slips on the strap to keep it handy for use.



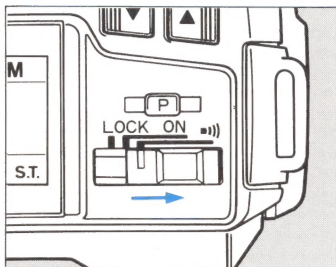
Putting camera in its case



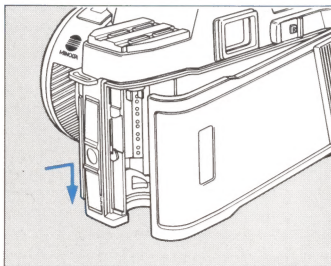
Various camera cases are available as optional accessories for the Minolta 7000.

To put camera in its case; attach front lens cap. If using a zoom lens, turn zoom ring until lens barrel is at its shortest position. Follow the diagrams to put the camera into its case.

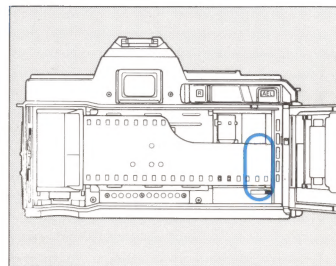
SUMMARY OF OPERATION IN PROGRAM MODE



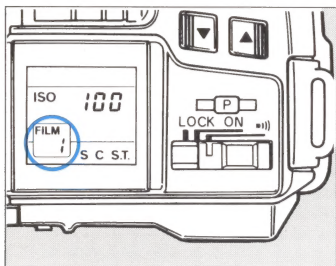
1. Slide main switch to **P**) (p. 12).



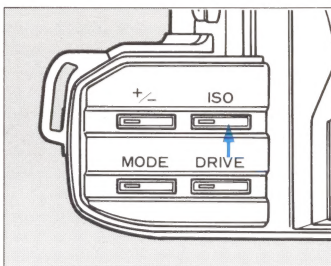
2. Open back cover (p. 14).



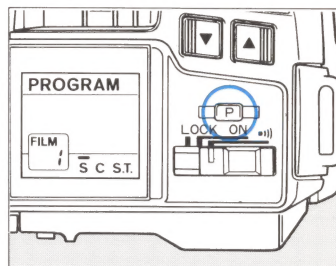
3. Load film properly and close cover (p. 14).



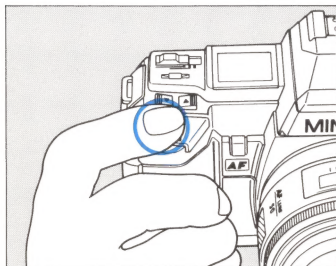
4. Check that film has advanced to first frame (p. 15).



5. Set film speed (p. 17; automatically set with DX-coded films).



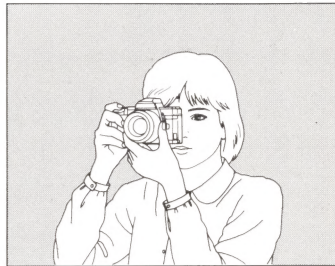
6. Set P mode, S drive, and cancel any exposure adjustment by using appropriate keys or pressing program reset (p. 22).



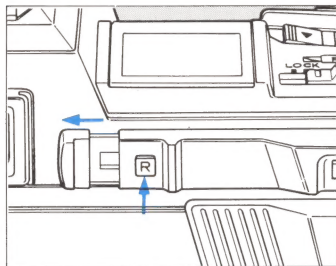
7. Turn on the meter (p. 13).



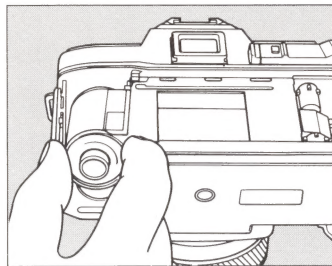
8. Focus (p. 32).



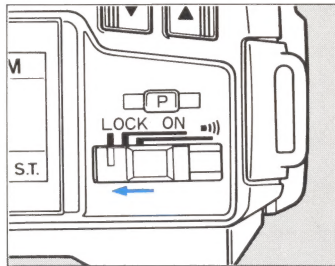
9. Release shutter (p. 37).



10. After last frame, rewind film (p. 38).



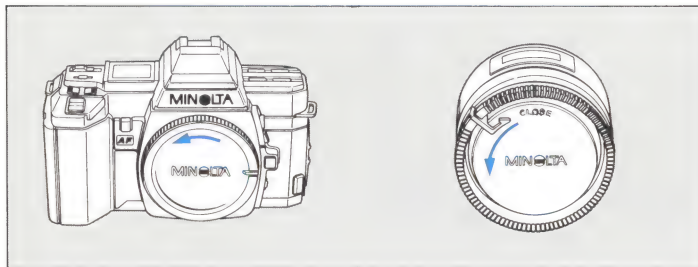
11. Remove film (p. 38).



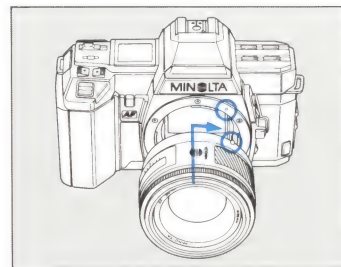
12. Slide main switch to LOCK (p. 12).

ATTACHING AND REMOVING LENS

To attach:



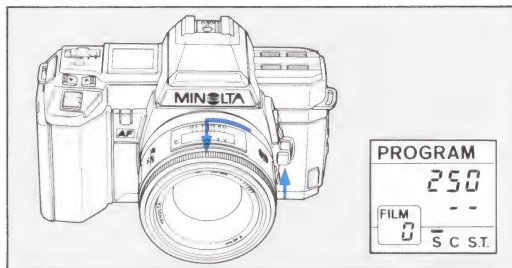
1. Remove body cap and rear lens cap as shown.



2. Align mounting index (red bead) on lens barrel with mounting index (red dot) on lens mount.

3. Insert lens bayonet into mount and turn lens clockwise until it locks in place with a click.

To remove:



While pressing lens release, turn lens counter-clockwise as far as it will go, then lift lens out of mount. When the camera's meter is on and the lens is removed, the aperture display shows "-- --".

NOTES

- When attaching or removing lenses, never touch anything inside the camera, especially the lens contacts or mirror.
- To protect lens contacts and lens elements, always attach body and rear caps whenever a lens is not in place.

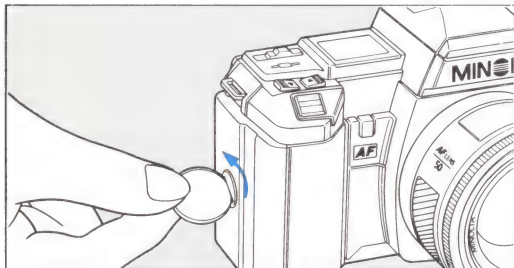
Care of glass surfaces

- Never touch lens elements or eyepiece with your fingers. If the lens becomes dirty, clean it gently with a lens brush. Only if necessary, moisten a sheet of lens tissue with one drop of lens-cleaning fluid. Then, starting at the center and using a circular motion, lightly wipe the glass surface.
- Never lift the mirror or touch its surface, as this may impair its alignment. Dust specks on the mirror's surface will not affect meter readings or picture quality; if they are annoying, have the camera cleaned at an authorized Minolta service facility.

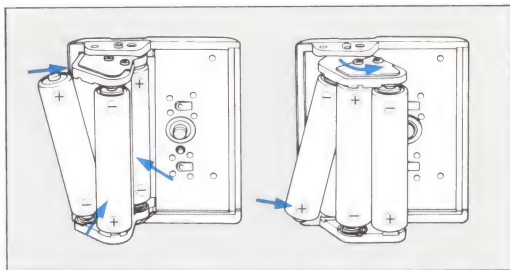
BATTERIES AND POWER

The camera uses four AAA-size 1.5v alkaline-manganese batteries. These supply power for all functions including film transport, metering, autofocus, and shutter release.

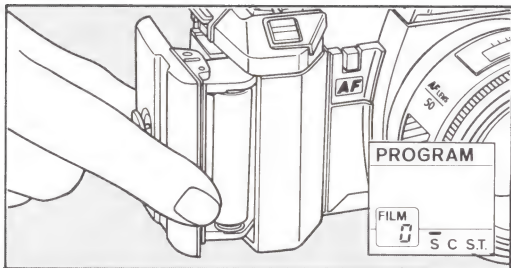
To load batteries:



1. Make sure main switch is at **LOCK** and remove battery holder by turning attaching screw with a coin or similar object.



2. Place new batteries in holder with plus (+) and minus (–) ends as indicated. Holder pivots for easier loading.



3. Attach battery holder to body. Turn attaching screw clockwise to tighten battery holder to camera body.

Exposure mode, drive mode, and frame number will appear in the data panel. If no display appears, batteries are improperly installed or completely dead. Check that batteries are loaded correctly or replace them.

NOTES

- To prevent damage from battery leakage or bursting, never mix batteries of different types, brands, or ages.
- If camera will not be used for more than two weeks, batteries should be removed.
- Used batteries should not be disposed of in fire.
- Keep batteries away from young children.
- The camera and standard battery holder are designed to use alkaline-manganese batteries; do not use carbon-zinc or nickel-cadmium batteries in the standard battery holder.
- To removing batteries, first pull out plus (+) end of battery, then lift battery out of holder.

Battery check

To check battery condition: After exposure, keep finger on operating button and check whether LCDs are blinking. If so, battery power is getting low and fresh alkaline-manganese batteries should be installed.

Low power indications

Fresh batteries should be installed in any of the following cases:

- When LCDs in viewfinder or on camera body blink.
- If shutter will not release and shutter speed and aperture are not displayed when operating button is pressed down.
- When film advance, rewind, or autofocus systems will not operate or when operation is extremely slow.

Cold-weather operation

Performance of batteries tends to decrease as they become colder. Before using the camera in cold weather, make sure fresh batteries are loaded. A spare set should be carried in a warm batteries are loaded. A spare set should be carried in a warm pocket, in case you need to change batteries while shooting. Battery capacity will be restored as temperature rises.

For prolonged cold-weather use (at approx. 0°C (32°F) or lower), using the optional Battery Holder BH-70L or External Battery Pack EP-70 with AA-size nickel-cadmium batteries is recommended.

MEMORY STORAGE

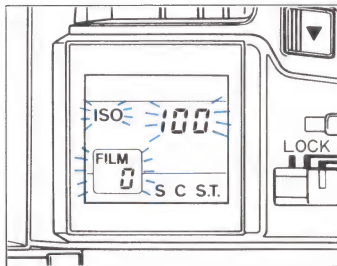
When main switch is in **LOCK** position, the following data is stored in the camera's memory: frame number, film speed, exposure mode, drive mode, exposure adjustment, and manually selected exposure settings.

Memory backup by built-in lithium battery

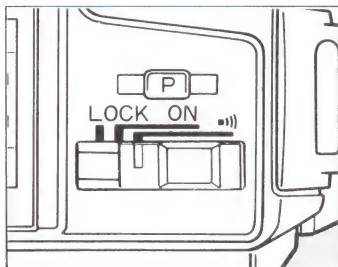
Data is stored using power from the batteries in the battery holder. When those batteries are exhausted or if battery holder is removed, a built-in lithium battery supplies power for memory backup. Frame number and film speed are stored, and exposure mode, drive mode, and exposure adjustment are reset to "PROGRAM", "S", and "0.0", respectively.

When the battery holder (with fresh batteries) is attached and the lithium battery is exhausted, the film speed setting will blink as a warning. When both lithium and regular batteries are completely exhausted, all displays go blank. After fresh batteries are installed, all memories are reset: frame number to "0", film speed to "ISO 100", exposure mode to "PROGRAM", drive mode to "S", and exposure adjustment to "0.0".

The lithium battery should last approximately 10 years. When replacement becomes necessary, contact an authorized Minolta service facility.



MAIN SWITCH



To prevent battery drain or accidental exposures, the main switch should be set to LOCK position. To operate camera, slide main switch to ON or ||| position.

At ||| position, the camera gives audible beeps: when subject is brought into focus; as a slow shutter-speed warning; at the end of the roll; and during self-timer operation.

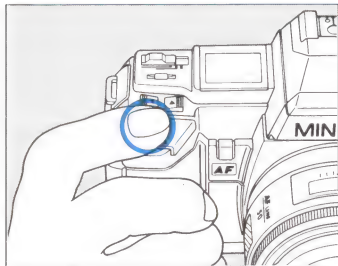
Slow shutter-speed warning


With main switch at ||| position and exposure mode set to program (P) or aperture-priority (A) mode, the camera will beep to warn that the shutter speed may be too slow for blur-free hand-held exposures. If possible, a faster shutter speed should be set by using program shift (in P mode) or a larger aperture (in A mode). If necessary, camera can be mounted on a tripod, braced against a post or other firm support, or flash may be used.

When you touch the operating button, camera beeps if the shutter speed is below:

- 1/30 sec. with lenses shorter than 35mm,
- 1/60 sec. with lenses from 35mm to 105mm,
- 1/125 sec. with lenses longer than 105mm.

OPERATING BUTTON



The operating button controls meter activation, autofocusing with focus hold, and shutter release. Operating button functions only when main switch is at ON or ; this prevents accidental exposures and prolongs battery life.

Meter activation

To activate the meter, touch the operating button. In low light, the LCD panel in the viewfinder is automatically illuminated. If proper contact is not possible (e.g., when fingers are very dry, or when wearing gloves), press the button slightly. For easier operation of other controls, meter remains on for 10 seconds after you lift your finger from the button.

Autofocusing with focus-hold

To activate autofocusing, press button halfway. Focus is held until you let up on the button.

Shutter release

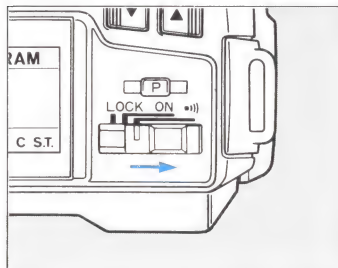
To release the shutter, press button all the way down. In P, A, and S modes, camera will automatically set exposure, focus lens, then release shutter.

NOTE

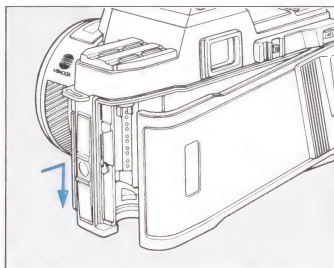
If operating button becomes dirty or oily, set main switch to LOCK and wipe button with a clean, dry cloth.

FILM LOADING

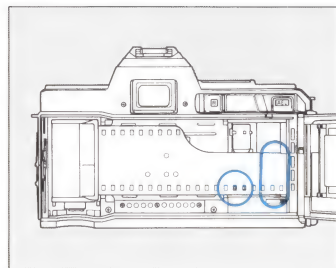
Always load film in subdued light or at least shaded from direct sunlight.



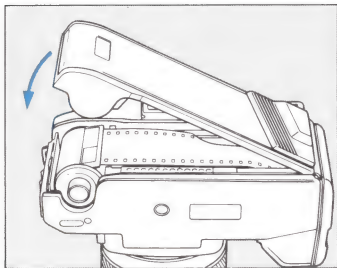
1. Switch camera on.



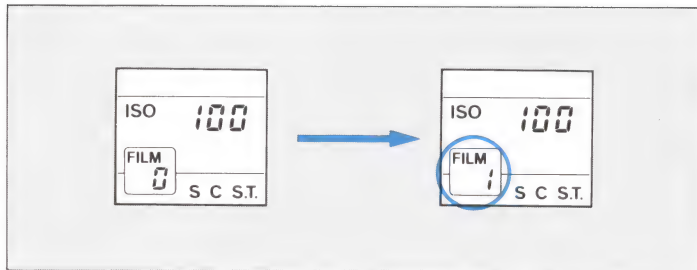
2. Open back cover by pressing button in the center of the back cover release and sliding release downward.



3. Place film cartridge in film chamber. Extend tip of film leader past the red leader index. Make sure holes in lower edge of film engage teeth on sprocket. If film extends too far or does not lie flat, gently push excess back into cartridge.

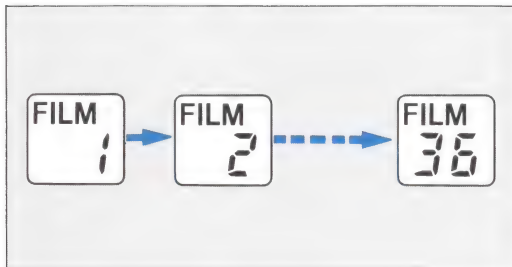


4. Close back cover by pressing until it snaps shut.



5. Camera will automatically advance film to the first frame, and "1" will appear in the frame counter. This indicates that the film is properly loaded and advancing correctly. If frame counter still shows "0", open back and repeat steps 2 to 4.

Frame counter



The frame number increases by one with each exposure. Frame number increases only when film is loaded and advancing properly.

Film loading precautions

- Before opening the camera back, always check film window to see if film is loaded and check that film is completely rewound (frame counter will show "0").
- If film leader is incorrectly shaped, film may not advance properly.

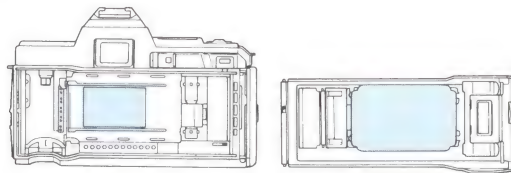
WRONG



RIGHT

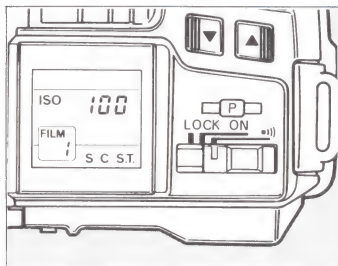


- Do not touch any parts or areas shown in blue.



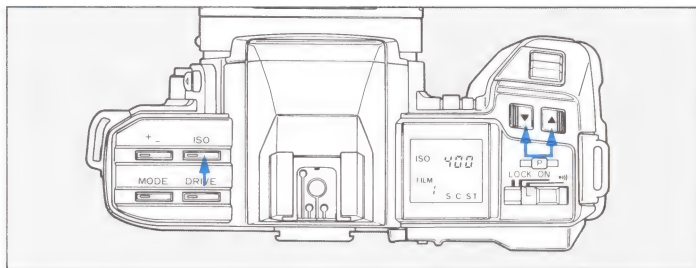
SETTING FILM SPEED

Automatic setting with DX-coded films



The film speed for DX-coded films is automatically set, and appears for ten seconds in the data panel as soon as the back is closed. Speed for these films can also be set manually to a higher or lower value after film has been loaded.

Manual setting of film speed



While pressing film speed key (marked ISO), press the shutter speed keys to increase or decrease the displayed value. Each time a shutter speed key is pressed, setting changes by 1/3 of a stop. Settings change rapidly when shutter speed key is held down.

Film speed setting can be checked at any time by pressing ISO key.

FUNDAMENTALS OF EXPOSURE CONTROL

When you take a picture, the shutter opens, and light from the subject passes through the lens to form an image on the film. To obtain correct exposure for the subject brightness and film being used, the aperture (size of the lens opening) and shutter speed (length of time the shutter is open) must be controlled.

As indicated by the aperture diagram next to each f-number in the figure, large f-numbers (e.g., $f/16$ and $f/11$) represent small apertures, and small f-numbers (e.g., $f/2$ and $f/1.4$) represent large apertures. Each standard f-number setting (e.g., $f/8$) lets in twice as much light as the next larger one ($f/11$) and half as much as the next smaller one ($f/5.6$). This difference in exposure between standard f-numbers is called one "stop".

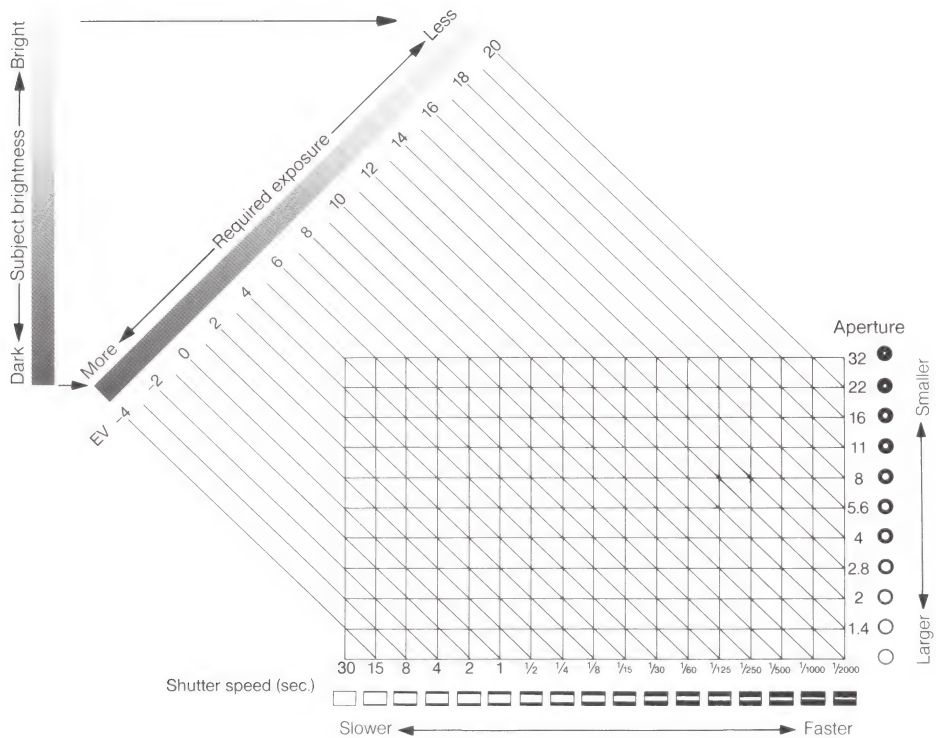
Shutter speeds are expressed in fractions of a second (usually the reciprocals of numbers shown on shutter speed scales) and in seconds. Each standard shutter speed (e.g., $1/60$ sec.) allows light to strike the film twice as long as the next faster one ($1/125$). This exposure difference between standard shutter speeds is

also called one "stop".

Total exposure on the film is determined by the combination of aperture and shutter speed. Using the next smaller f-number (i.e., giving one stop more exposure) will balance using the next faster shutter speed (i.e., giving one stop less exposure) and so on. A great range of combinations ($f/5.6$ at $1/30$, $f/4$ at $1/60$, $f/2.8$ at $1/125$, etc.,) will thus yield the same total exposure.

The diagonal lines correspond to exposure values (EV); all of the aperture/shutter-speed combinations indicated by a given line will produce the same exposure. At a particular film speed, the EV increases by one each time the subject brightness doubles, and thus the exposure required will decrease by one stop. On the other hand, when the EV is one unit lower (i.e., when the subject is only half as bright), the exposure must be increased by one stop.

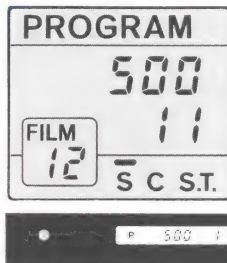
The film-speed-coupled metering system measures the brightness of the subject and computes the EV needed for proper exposure. This EV is used for setting aperture and shutter speed.



EXPOSURE MODE SELECTION

Your Minolta 7000 features four exposure-control modes. The following summaries will help you choose the best one for a specific situation.

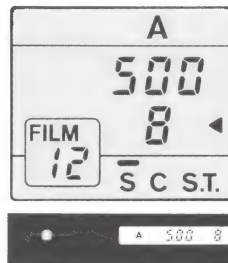
Program (P) mode



Program (P) mode is ideal when you just want to compose and shoot. Aperture and shutter speed are set automatically and displayed in the viewfinder and data panel.

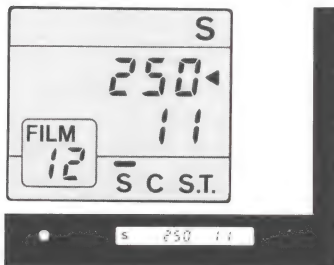
This mode's auto multi-program automatically selects the program according to focal length in use. For its program shift feature, see page 24.

Aperture-priority (A) mode



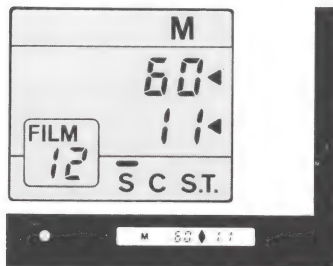
Use A mode when you want to control depth of field. The aperture can be set in half-stop increments. The stepless shutter speed for accurate exposure is automatically set by the camera and displayed to the nearest half-stop.

Shutter-priority (S) mode

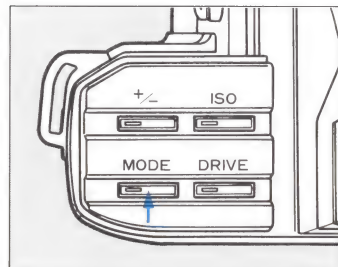


For photographing moving subjects, S mode is the choice. You can use fast shutter speeds, up to 1/2000 sec., to "freeze" action, or slow speeds to intentionally blur the movement. The camera will automatically set the aperture and display it to the nearest half-stop.

Metered-manual (M) mode



In M mode, you get full creative control of exposure. Any available shutter speed or aperture can be set. The metering indicators in the viewfinder can be followed, or you can vary exposure based on your own experience.



Setting exposure mode is a simple, two-step operation: While pressing exposure mode (MODE) key, press either of the shutter speed keys until desired mode is displayed in the data panel:

"PROGRAM" for programmed auto-exposure mode

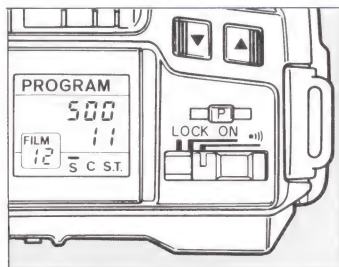
"A" for aperture-priority mode

"S" for shutter-priority mode

"M" for metered-manual mode

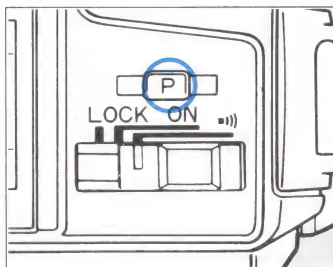
PROGRAM (P) MODE

To set mode:



While pressing MODE key, press either of the shutter speed keys until "PROGRAM" appears in the data panel.

Program reset



When you want to quickly set the camera to Program mode, S drive mode, and cancel any exposure adjustment, just press and release the program reset (P) button.

Auto multi-program selection

In P mode, one of three programs is automatically selected to match the lens focal length actually in use.

Shorter than 35mm:

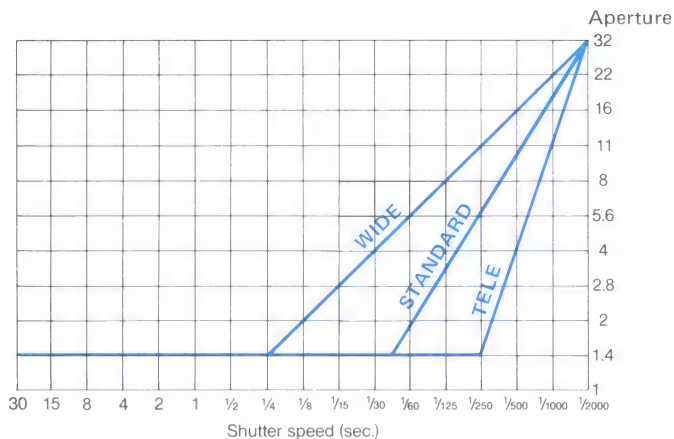
Wide program sets smaller apertures for maximum practical depth of field.

35mm to 105mm:

Standard program is Minolta's faster-speed type that chooses optimum shutter speeds and apertures.

Longer than 105mm:

Tele program selects faster shutter speeds to protect against blur from camera shake.



NOTES

- Program selection is automatic; it is not possible to manually select a specific program.
- With zoom lenses, the program automatically changes as you zoom from one range to the next. With the AF 28-135mm zoom, for example, as you zoom from 28mm to 135mm, the program changes from Wide through Standard to Tele.
- If light level is outside the metering range, \blacklozenge blinks in viewfinder as a warning that exposure may not be correct.
- If both shutter speed and aperture blink, required shutter speed-aperture combination is not available.

Program shift

This feature lets you temporarily select alternative aperture-shutter speed settings while remaining in Program mode. Both settings change as the program is adjusted for faster/slower shutter speeds and larger/smaller apertures. Programmed settings can be shifted in half-stop increments, and exposure mode LCDs blink to indicate when program shift is in use.

Using program shift

To change aperture-shutter speed settings, press either shutter speed or aperture keys until the desired setting appears in the viewfinder and data panel.

NOTES

- Before exposure, shifted settings are held for ten seconds after lifting finger from operating button. After exposure, program shift is cancelled as soon as finger is lifted from operating button. To make several exposures using the same settings, keep finger on operation button between exposures.
- When using zoom lenses, shift program after zooming. When zooming from 70mm to 210mm, for example, the program changes from Standard to Tele, and the shifted settings will also change.



PROGRAM	
350	
FILM	8
20	S C S.T.



PROGRAM	
100	
FILM	16
20	S C S.T.



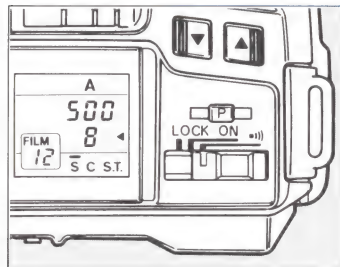
PROGRAM	
125	
FILM	3.5
10	S C S.T.



PROGRAM	
500	
FILM	17
10	S C S.T.

APERTURE-PRIORITY (A) MODE

To set mode:




While pressing MODE key, press either of the shutter speed keys until "A" appears in the data panel. A triangular indicator appears next to the aperture setting to show that it can be set manually.

To set aperture:

Press aperture or shutter speed keys until desired aperture is shown in data panel. Each time you press the key, aperture changes by a half-stop. Aperture changes rapidly when key is held down.

- Any available aperture from the aperture range indicated on the front of the lens can be set. The AF 50mm/1.7 lens is marked 1:1.7(22) indicating a range of f/1.7 to f/22.





NOTES

- Shutter speed blinks when the speed needed is outside the coupled range. If "2000" blinks, set smaller apertures until blinking stops. If "30" blinks, set a larger aperture until blinking stops.
- If light level is outside the metering range,  blinks in viewfinder as a warning that exposure may not be correct.

Selecting an aperture

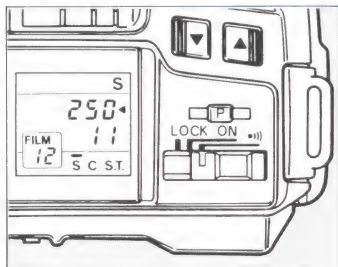
In A mode, you can set the aperture required by the subject or effect desired. For further information about creative aperture control, refer to page 40.

For taking good pictures with utmost ease, simply set the aperture as indicated in the table. These settings will provide as much depth of field (p. 46) as practical while using shutter speeds fast enough for hand-held pictures.

	Sunny 	Hazy sun 	Heavy overcast 	Indoors 
ISO				
25/15°	f/8	f/4	f/2	f/1.7
64/19°	f/8	f/4	f/2.8	f/1.7
100/21°	f/11	f/5.6	f/4	f/1.7
160/23°	f/11	f/8	f/5.6	f/2
200/24°	f/11	f/8	f/5.6	f/2
400/27°	f/16	f/11	f/8	f/2.8

SHUTTER-PRIORITY (S) MODE

To set mode:




While pressing MODE key, press either of the shutter speed keys until “S” appears in the data panel. A triangular indicator appears next to the shutter speed setting to show that it can be set manually.

To set shutter speed:

Press shutter speed or aperture keys until desired speed is shown in data panel. Each time key is pressed, speed changes by one stop. When either key is held down, speed changes rapidly.

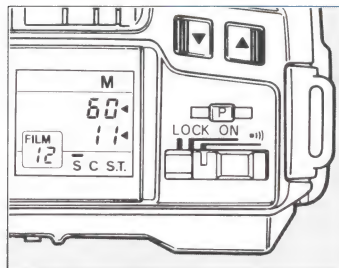
- Any available shutter speed from 30 sec. to 1/2000 sec. can be set.
- Camera’s X-sync speed, 1/100 sec., can also be set.

NOTES

- Do not use “bulb” setting which appears after the 30-sec. setting. “Bulb” should only be used in M mode.
- If lens’ maximum aperture (e.g., f/1.7) blinks, set slower shutter speeds until blinking stops. If minimum aperture (e.g., f/22) blinks, set faster shutter speeds until blinking stops.
- If light level is outside the metering range,  blinks in viewfinder as a warning that exposure may not be correct.

METERED MANUAL (M) MODE

To set mode:



While pressing MODE key, press either of the shutter speed keys until "M" appears in data panel. Triangular indicators appear next to shutter speed and aperture settings to show that both can be set manually.

To set aperture and shutter speed:

Aperture and shutter speed are set independently of each other by pressing the appropriate shutter speed/aperture keys. Any combination of available settings can be used.

To adjust exposure:

LCD pointers in the viewfinder let you fine-tune the correct exposure or vary exposure for creative effects.

When both pointers appear, exposure is correct within $\pm 1/4$ stop.	M 125 \blacklozenge 5.6
When only the upper pointer (\blacktriangle) appears, exposure is $1/4$ stop or more above normal.	M 80 \blacktriangle 5.6
When only the lower pointer (\blacktriangledown) appears, exposure is $1/4$ stop or more below normal.	M 250 \blacktriangledown 5.6

NOTE

If light level is outside the metering range, \blacklozenge blinks in viewfinder as a warning that exposure may not be correct.

APERTURE AND SHUTTER SPEED SETTINGS

22
19
16
13
11
9.5
8
6.7
5.6
4.5
4
3.5
2.8
2.4
2
1.7

Aperture settings

Table at left shows aperture settings that are displayed in P and A for the 50mm f/1.7 lens. Numbers such as 6.7 and 9.5 are half-stop settings between whole f-stops. Thus, for example, the half-stop setting between f/8 and f/11 is f/9.5.

Shutter speed settings

Table at right shows shutter speed settings that are displayed in P and A modes. In M and S modes, only the speeds in bold type can be set. Numbers such as 750 and 350 are half-stop indications between standard shutter speeds. Thus, for example, the half-stop indication between 1/1000 sec. and 1/500 sec. is 1/750 sec.

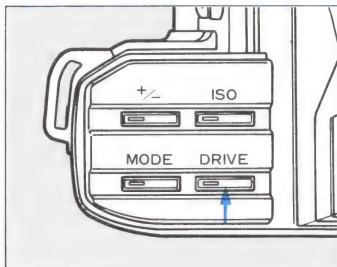
Indications for speeds from 1/2000 sec. to 1 sec. are: 2000 = 1/2000 sec., 1000 = 1/1000 sec., etc. Speeds from 0.7 sec. to 30 sec. are indicated: 0"7 = 0.7 sec., 1" = 1 sec., 1"5 = 1.5 sec., etc.

NOTE

"Bulb" setting should be used only in M mode.

2000
1500
1000
750
500
350
250
180
125
100
60
45
30
20
15
10
8
6
4
3
2
0"7
1"
1"5
2"
3"
4"
6"
8"
10"
15"
20"
30"
bulb

DRIVE MODE SELECTION

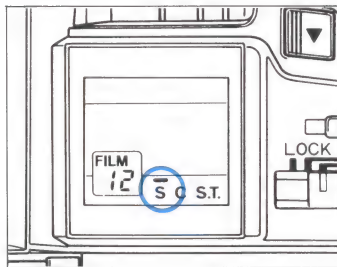


The Minolta 7000 features two drive modes: "S" drive for single-frame advance and "C" drive for continuous advance. "S.T." is the indication for self-timer. Refer to page 48 for information about self-timer operation.

- In single-frame mode, film is advanced one frame after each exposure, and the camera is always ready for the next shot.
- In continuous mode, just hold the operating button down to capture fast-action sequences at up to two frames per second.

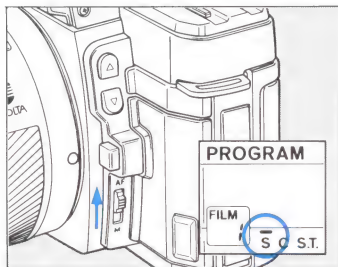
To set drive mode:

While pressing drive mode (DRIVE) key, press either of the shutter speed keys until a small bar appears above the desired mode.



FOCUSING

To autofocus with single-frame advance:



1. Set focus mode switch to AF and drive mode to "S".



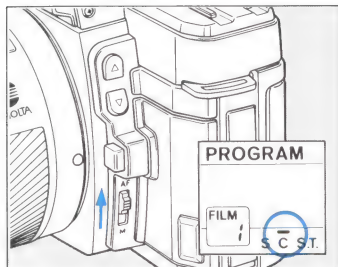
2. Center focus frame on subject.

3. Press operating button halfway. The camera automatically focuses lens. The green focus signal in the viewfinder glows (and camera beeps at ■||) position) when subject is in focus.



4. Focus is held as long as operating button is kept pressed. If desired, you can recompose the picture with the subject anywhere in the frame.
5. To release the shutter, press operating button all the way down.

To autofocus with continuous film advance:



1. Set focus mode switch to AF and drive mode to "C".



2. While keeping the focus frame centered on the subject, press operating button all the way down. Camera will continuously focus and release the shutter as long as operating button is pressed.

To prevent out-of-focus pictures, the shutter will release only when the subject appearing in the focus frame is in focus.

NOTE

If illumination is too low or if subject cannot be auto-focused, both red focus signals will blink to indicate that manual focusing is necessary.

Focus signals during autofocus

Too close to subject



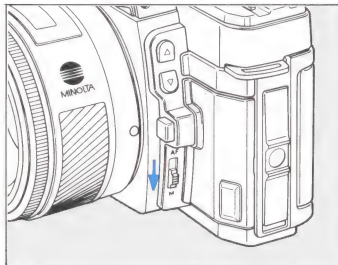
In focus



Focus manually on Acute-Matte screen



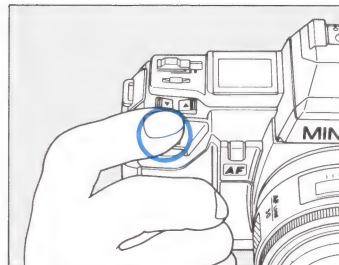
To focus manually with focus signals:



1. Set focus mode switch to M.



2. Center focus frame on subject.



3. Touch operating button to activate focus signals.

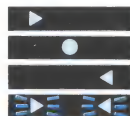
Focus signals during manual focusing

Turn focusing ring to the right

In focus

Turn focusing ring to the left

Focus manually on Acute-Matte screen

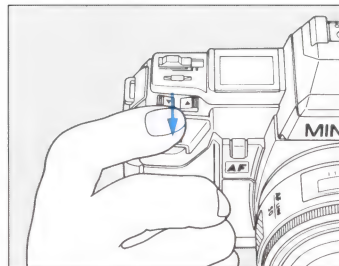




4. a. The red triangular LEDs in the viewfinder will light to indicate which way to turn the lens. Turn the focusing ring until the green circular LED glows.



- b. Blinking of both red LEDs indicates that the subject cannot be focused with signals, but must be focused visually using the Acute-Matte focusing screen. Turn focusing ring until subject appears sharpest in the viewfinder.

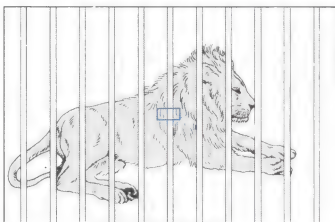


5. Press operating button all the way down to release the shutter.

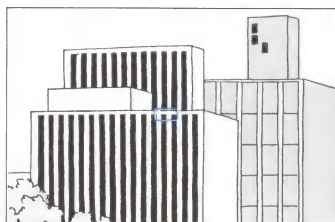
Autofocusing in special situations



A



B



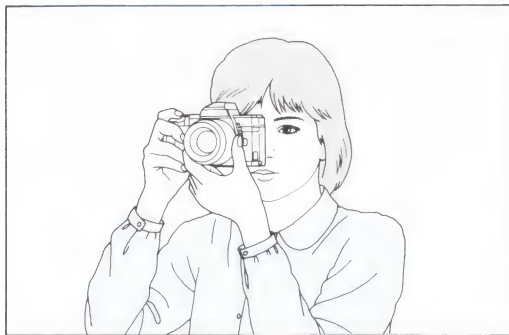
C

In situations where red LEDs blink or the green LED glows but the subject does not appear sharp, additional care should be taken to assure accurate focus:

- If subject contrast is too low (A), use focus-hold to lock focus on another subject at the same distance, then recompose photograph and release shutter.
- In cases where two subjects are at different distances within the focus frame (B) or where parallel lines interfere with autofocusing (C), focus manually on Acute-Matte screen.

- When light is too low for the autofocus system to respond, a Minolta Program Flash can be used.
- For extremely bright subjects, using a neutral-density filter is recommended.

TAKING PICTURES



A.

To obtain sharp, blur-free photos, hold the camera as still as possible and steady it against your face or body. Press the operating button gently with a slow, steady squeeze—never a quick jab.

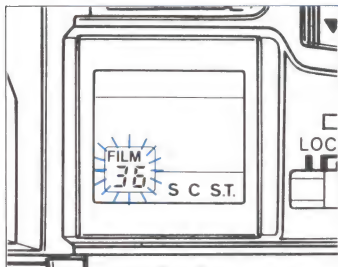



B.

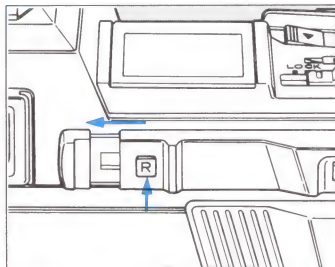
Two recommended ways of holding the camera are shown here. If you grasp the camera firmly with your right hand on its handgrip, you can shift it back and forth for horizontal **(A)** and vertical **(B)** pictures without removing your hands from the controls. When autofocusing, be sure not to hold focusing ring.

REWINDING AND UNLOADING FILM

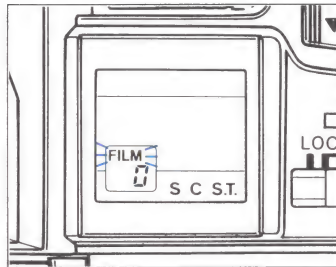
To rewind and unload film:



After the last frame, "FILM" and frame number blink (and camera beeps at  position). To prevent double exposures or damage to the film, the shutter locks, and exposure settings disappear until film is fully rewound.



1. While pressing rewind release (R), slide rewind switch to left. (It stays in this position; you need not hold it.) During rewinding, "FILM" blinks.



2. After rewinding, "FILM" continues to blink and "0" appears in frame counter. Open back cover and remove film.

NOTE

If rewinding stops before "0" appears, **do not open back cover**. Slide main switch to LOCK, insert fresh batteries, and slide switch ON to finish rewinding.

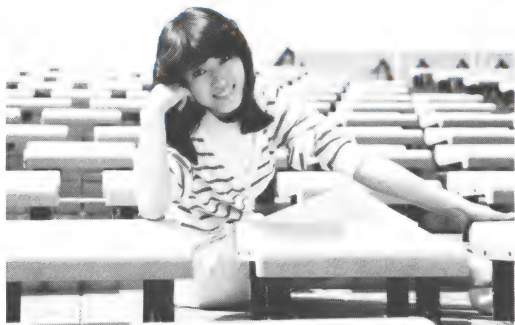
FLASH PHOTOGRAPHY

For daylight fill-flash or in low light, a Minolta Program Flash unit can be attached to the camera's accessory shoe. With this unit and your Minolta 7000, flash photography is as simple as available-light photography. TTL (through-the-lens) metering controls exposure in all modes. LEDs in the viewfinder and on the flash unit keep you well informed during operation.

For further information, refer to the owner's manual for the flash unit.



CREATIVE APERTURE CONTROL



A. Large aperture

Sometimes you may want to set the lens aperture to obtain a certain effect, such as making a large part of the scene sharply focused or emphasizing a subject against an out-of-focus background. In A mode, once desired aperture is set, the camera will automatically select the proper shutter speed.



B. Small aperture

Large apertures (small f-numbers) yield a shallow field of sharp focus (photo **A**). Small apertures (large f-numbers) give greater depth of field (photo **B**). To determine approximate depth of field, use the depth-of-field scale marked on the lens (see p. 46).

CREATIVE SHUTTER SPEED CONTROL



A. Fast shutter speed

At other times, the subject or effect you want may require a certain shutter speed. If so, press the shutter speed keys until the desired speed is indicated in the data panel. In shutter-priority mode, the correct aperture for normal exposure will be automatically selected by the camera.

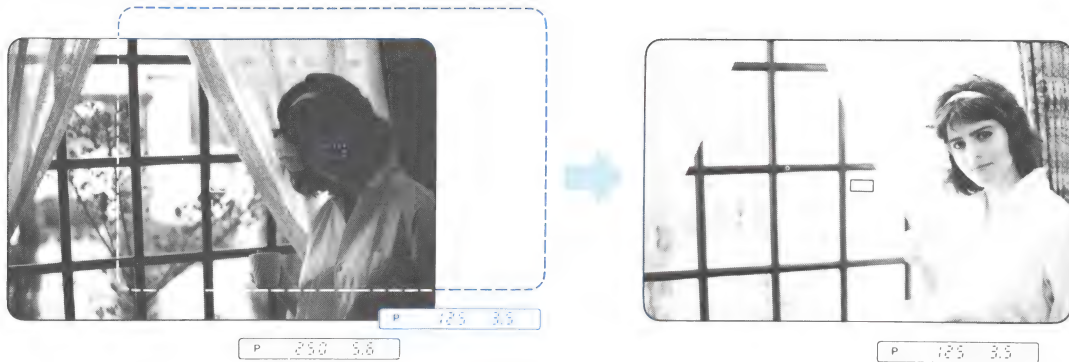


B. Slow shutter speed

Fast shutter speeds, such as $1/500$ to $1/2000$ sec., can be used to “freeze” action (photo **A**). Slow shutter speeds, such as $1/15$ sec. or slower, can be used to emphasize subject flow or motion (photo **B**).

AE LOCK

To operate:



The AE (auto-exposure) lock is used to obtain proper exposure in high-contrast lighting situations where the subject is on the edge of the frame or occupies only a small part of the center. A detailed explanation of when to use AE lock is given on page 44.

1. Shift camera's position so subject fills most of the frame. For smaller subjects, you may need to move closer (or zoom in).

2. With meter on, press and hold AE lock (AEL button).

3. While keeping it pressed, recompose picture, focus, and release the shutter.

NOTES

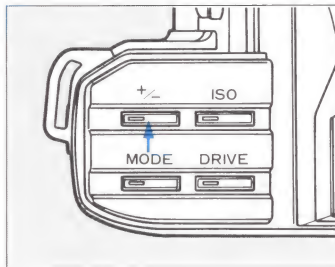
- Aperture and shutter speed can be changed while AE lock is engaged.
- AE lock will not operate in M mode.

EXPOSURE ADJUSTMENT

Exposure adjustment can be used to deliberately increase or decrease exposure from the normal metered value. Adjustment range is from +4 to -4 stops in half-stops.

Exposure adjustment can also be used for flash exposures with the Program Flash units.

To set:



1. While pressing exposure adjustment (+/-) key, press the shutter speed keys until desired value appears in data panel. Set minus (-) numbers to decrease exposure and plus (+) numbers to increase exposure.

- Each time shutter speed key is pressed, setting changes by one half-stop.
- Whenever exposure adjustment is set, "+" or "-" symbol appears in viewfinder and data panel.
- Adjusted value can be checked by pressing the exposure adjustment key.

In P mode, both aperture and shutter speed change; in A mode, shutter speed changes; in S mode, aperture changes. In M mode, indicated exposure includes exposure adjustment.

NOTES

- Reset exposure adjustment to "0" after use.
- When using the R60 (red) filter, adjust exposure +1.0 stop.

WHEN TO USE AE LOCK AND EXPOSURE-ADJUSTMENT CONTROL

The following suggestions will help you choose when to use AE lock or exposure adjustment. Individual conditions and taste will, of course, determine which exposure is best.

- For scenes where there is a great brightness difference between the subject and background, and the most important area is considerably darker than the surrounding area: The AE lock can be used to hold the meter reading made with the camera positioned so subject fills most of the finder. Alternatively, an exposure adjustment between +0.5 and +2.0 stops can be set, depending on lighting conditions. Either method will tend to give proper exposure of the main subject. The example photos were taken with strong backlighting and no fill-in illumination (photos **A** and **B**).
- When the most important subject area is much brighter than the rest of the picture, use AE lock or set exposure adjustment between -0.5 and -2.0 stops, depending on lighting conditions. Examples are subjects against a very dark background that are illuminated by bright sunlight or a spotlight (photos **C** and **D**).
- For scenes where most of the tones are very light, such as snow-covered hillsides, an adjustment of +0.5 to +2.0 stops may be necessary. Similarly, an adjustment of -0.5 to -2.0 stops can be used when the overall scene is composed of mostly darker tones.
- Exposure adjustment can also be used to “bracket” a series of exposures differing by a half-stop or more each. This is especially useful when you are not sure which exposure will look best, as when photographing a sunset.



A. Without AE lock or exposure adjustment



B. With AE lock or exposure adjustment

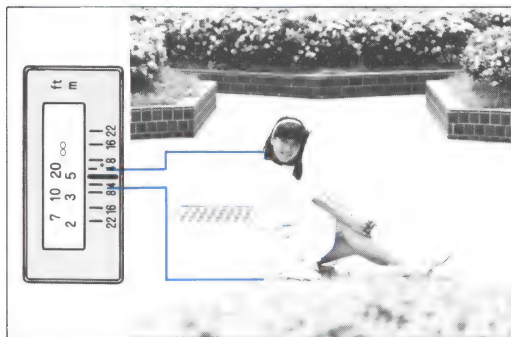


C. Without AE lock or exposure adjustment



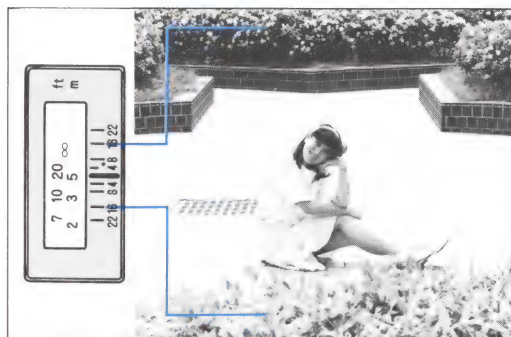
D. With AE lock or exposure adjustment

DEPTH OF FIELD



A.

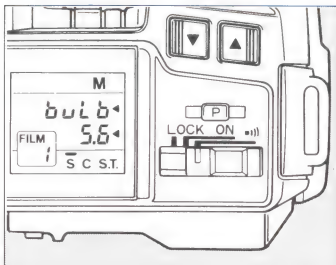
When a lens is focused on a subject, there is a certain range behind and in front of the focused point that appears sharp. This range is called "depth of field", and it varies according to the aperture set: Large apertures (e.g., $f/4$) yield a shallow field of sharp focus, rendering the background and foreground out of focus (example A); small apertures (e.g., $f/16$) yield greater depth of field with more of the scene in focus (example B). Refer to the depth-of-field scale on the lens to check approximate depth of field.



B.

Depth of field also varies with subject distance: When the lens is focused on a close subject, depth of field is less; when focused on a distant subject, depth of field is greater. At the same aperture and subject distance, depth of field varies with the focal length being used: Use shorter focal lengths, such as 24mm or 28mm, for increased depth of field; longer focal lengths, such as 135mm or 300mm, for less depth of field.

TIMED LONG EXPOSURES (“bulb” setting)



With camera in M mode, press the left shutter speed key until “bulb” appears (after “30”).

- Shutter will remain open as long as operating button is pressed.
- Elapsed exposure time (in seconds) is shown in the frame counter. After “99” seconds, counter returns to “0” and continues counting. After exposure, frame number is displayed.
- To avoid shaking the camera, the optional Remote Cord RC-1000S or RC-1000L can be used to release the shutter.

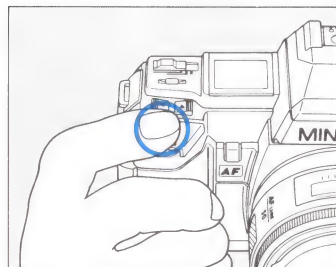
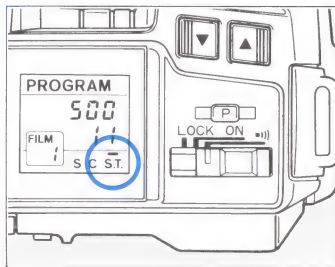
NOTES

- Self-timer operation is not possible at “bulb” setting.
- The maximum exposure time depends on battery capacity: With fresh, AAA-size alkaline-manganese batteries, it will be approx. 4 hours. With AA-size alkaline-manganese batteries in the optional Battery Holder BH-70L, approx. 9 hours.
- If battery power decreases during exposure, the mirror will lock in the up position. To return it to down position, set main switch to LOCK, replace batteries, and slide main switch ON.
- To use eyepiece cap, refer to page 50.

SELF-TIMER OPERATION

The electronic self-timer can be used to delay shutter release for ten seconds. Film is automatically advanced one frame after exposure.

To use self-timer:

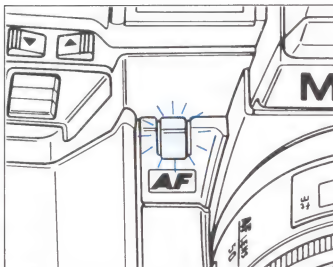


1. While pressing DRIVE key, press either of the shutter speed keys until a bar appears over "S.T." in data panel.
2. Set camera to desired exposure mode.

3. To focus, press operating button halfway.



4. When green LED in viewfinder glows, press operating button all the way down.



5. The self-timer LED on front of camera blinks during the 10-second countdown. Frame counter displays remaining seconds until shutter release (and camera beeps at ■||) position).

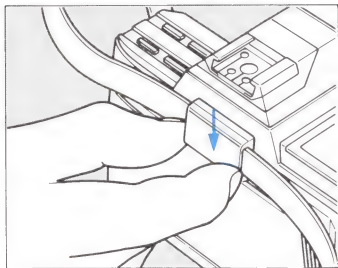
To cancel operation:

If you have started the self-timer and want to cancel it before the shutter releases, press the DRIVE key.

NOTES

- Eyepiece cap should be slipped over eyepiece frame when using self-timer.
- After using self-timer, be sure to set camera to either "S" or "C" drive mode.

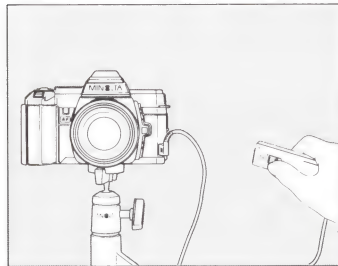
Eyepiece cap



The eyepiece cap slips on over the eyepiece frame. It should be used when the eyepiece is not shielded by your head, as in remote-control photography, “bulb” operation, or when using the self-timer. This will prevent stray light from entering through the eyepiece and affecting exposure.

The eyepiece cap threads onto the camera strap to keep it handy.

Mounting camera on tripod



To prevent blur when exposure times are too long for hand-holding the camera, mount it on a tripod using the socket on camera bottom.

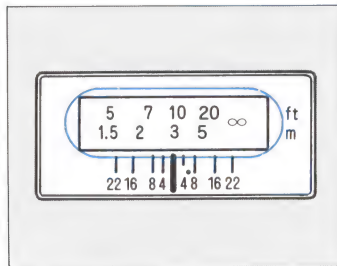
The optional Remote Cord RC-1000L or RC-1000S can be used to release the shutter without shaking camera.

NOTES

- Do not use excessive force when attaching the camera to tripod.
- Mounting screw should not be longer than 5.4mm (1/4 in.).

OTHER FOCUSING METHODS

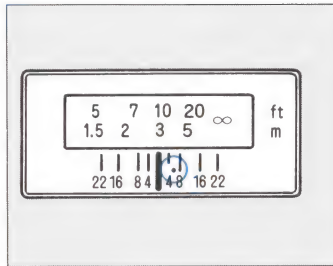
Distance scale



You may find that in the following situations it is easier to manually set focus to a specific distance:

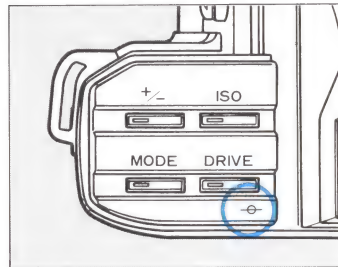
- When taking long exposures where it is too dark to focus visually.
- When you want to prefocus the lens at a certain distance and release the shutter as the subject reaches that spot.

Infrared index



For proper focus when using infrared film, focus subject as usual and attach a filter, if desired. With focus mode switch at M, turn focusing ring until distance shown opposite the distance index with the infrared index.

Film-plane index



This symbol indicates the position of the film inside the camera. It is used for measuring the film-to-subject distance, as when taking photographs at high magnifications.

ACCESSORIES

Program Flash 1800AF: This ultra-compact unit is extremely easy to use; just switch it on and you are ready to shoot. It accepts a 6v lithium battery for shortest recycling, and AAA-size alkaline batteries can also be used. Guide Number is 18 in meters (59 in feet) with 35mm coverage.

Program Flash 2800AF: This intermediate unit provides increased flash power and has a Guide Number of 28 in meters (92 in feet) with 35mm coverage. Other features include high/low power settings and sufficient-exposure confirmation.

Program Flash 4000AF: This powerful unit has a Guide Number of 40 in meters (131 in feet) with 50mm coverage. An auto-zoom/bounce head enables efficient lighting control. The LCD panel shows power level, flash coverage, and flash ranges.

Guide numbers are based on ISO 100



Control Grip CG-1000 Set

The Control Grip CG-1000 attaches cordlessly to the Minolta 7000 and accepts either the Program Flash 4000AF or 2800AF. Its battery pack holds six AA-size batteries and delivers the additional power needed to reduce recycling time for sequential shooting. When two Program Flash or other compatible units are used, lighting-ratio control is automatic. Included in the CG-1000 set are an AF Illuminator AI-1000 and 5m Extension Cable EC-1000.



Program Back Super 70 and Program Back 70

Either of Minolta's Program Backs can be attached cordlessly in place of the Minolta 7000's standard back. Film speed for data imprinting is set automatically by the camera.

Program Back Super 70 features: Seven exposure modes, including three user-selectable exposure programs; automatic bracketing of up to 9 exposures; an intervalometer with settings for start time, length of interval, number of exposures per interval, and number of groups of exposures; concealed data imprinting of exposure data, consecutive and fixed numbers, date, or time along edge of frame; and a metering memory that stores up to 8 readings from the camera's built-in meter.

Program Back 70 enables imprinting of time (with day), year/month/day in any of three orders, consecutive numbers, or fixed numbers. When desired, imprinting can be combined with its intervalometer and long-exposure functions.



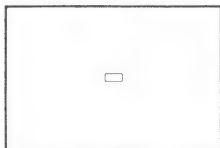
Minolta AF lenses

A wide range of Minolta AF lenses is available for your Minolta 7000. These can be purchased separately from your photo dealer.

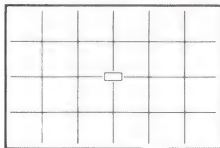
The Minolta AF lens system now features focal lengths from 24mm wideangle to 600mm apochromat telephoto. Included are seven macro/zooms covering focal lengths from 28mm to 300mm. Among these outstanding zoom lenses are the ultra-compact 35-70mm and 100-200mm zooms, which enable photographing landscapes or portraits with equal ease.

All Minolta AF lenses attach to the camera in the same way as explained earlier in this manual. When using program mode, the camera instantly selects one of three exposure programs based on the lens focal length in use. This is called as Auto Multi-Program Selection.

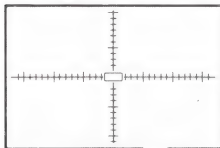




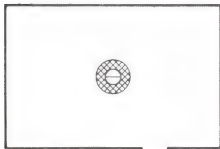
Type G



Type L



Type S



Type PM

User-changeable focusing screens

The 7000's standard focusing screen is designed specifically for Minolta's high-tech autofocus system. Users can replace this screen with any of three additional Acute-Matte screens. Tweezers are supplied with each screen, and replacement is quick and simple.

Type G: Standard screen: focus frame centered in matte field

Type L: Matte field with grid; for general and architectural photography

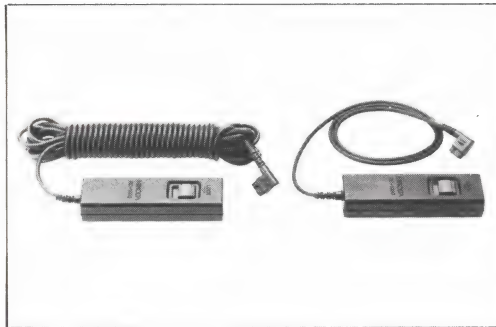
Type S: Vertical and horizontal scales; for macro-, micro-, and astrophotography

Type PM: Split-image/microprism/matte-field; autofocus zone along split-image



Wireless Controller IR-1N Set

The Wireless Controller IR-1N Set permits cordless, remote-control photography from up to 60 meters (approx. 200 ft.) away. The receiver senses infrared pulses from the transmitter and releases the shutter with single or continuous film advance. Separate receivers can be used for remote control of up to three cameras.



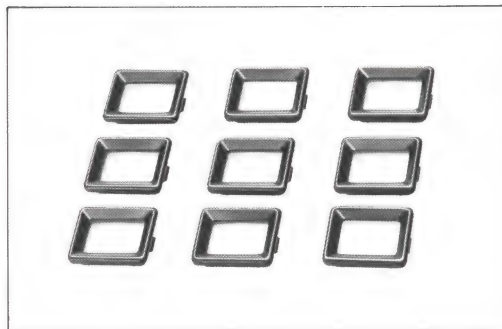
Remote Cord RC-1000L and RC-1000S

A remote cord should be used for long exposures at "bulb" setting or anytime you want to release the shutter without shaking the camera. Autofocus and meter are both activated by partially depressing the release button. Pressing and sliding the release button locks the shutter open for long exposures. RC-1000L is 5m (16-1/2 ft.) long, RC-1000S is 50cm (approx. 20 in.) long.



Battery Holder BH-70L and External Battery Pack EP-70

Battery Holder BH-70L replaces the standard AAA-size battery holder. The External Battery Pack EP-70 can be slipped into your pocket to keep them warm when taking pictures in cold weather. The BH-70L and EP-70 both use AA-size alkaline-manganese or nickel-cadmium batteries.



Eyepiece Corrector 1000

Nine eyepiece correction lenses are available for the 7000. They permit adjustments from -4 to $+3$ diopters and are very useful for near-or farsighted photographers. Correction lenses snap into the camera's eyepiece frame.

Filters

Autofocusing can be used with these Minolta filters:

L37 (UV), Y52 (yellow), G0 (green), O56 (orange), R60 (red), 1A and 1B (skylight), Minolta Portrayer.

Minolta Polarizing (Circular) Filter

Autofocusing will not work when a regular polarizing filter is attached to the Minolta 7000's lens. Instead, the Minolta Polarizing (Circular) Filter should be used. This filter is specifically designed for use with autofocus cameras and other cameras with semi-silvered mirrors, but can also be used with manual-focus cameras. It reduces or eliminates reflections from glass, water, etc.

Other filters

Autofocusing may not be accurate when using other filters. In this case, focus manually with the filter attached.

Other Minolta accessories

The following Minolta System accessories can be used with the Minolta 7000:

Angle Finder V_N, Magnifier V_N, Cable OC, Cable EX, Cable CD, Off-Camera Shoe, filters, Wireless Controller IR-1 Set with optional Connecting Cord IR-1 (C).

Minolta autoflash units

All Minolta Auto Electroflash units can be used on the Minolta 7000; however, autofocusing in total darkness and certain other features are not possible.

360PX and 132PX: FDC (flash distance check) signal does not function; all other functions are the same.

280PX: FDC signal does not function; "Lo" power setting cannot be used.

Macro 80PX: FDC signal does not function; illumination lamps go out when operating button is touched.

X-series units: TTL metering and FDC signal do not function.

IMPORTANT NOTICE

The Minolta AF SLR System is designed and produced to offer innovative functions and performance through the combination of Minolta AF SLR camera bodies, Minolta AF lenses, Minolta Program flash units and other accessories distributed by Minolta.

We thus caution users that the attachment or use of incompatible lenses, flashes and accessories may result in unsatisfactory performance or damage to the Minolta AF SLR cameras or their system accessories.

For optimum performance throughout the life of the Minolta AF SLR cameras and their accessories and to obtain the benefits of future Minolta AF SLR system products, we recommend use only of lenses, flashes and other accessories manufactured by Minolta for the Minolta AF SLR cameras.

TECHNICAL DETAILS

Type: 35mm SLR with microcomputer control of autofocus, auto multi-program, multi-mode, auto film transport, and LCD data panels

Lens mount: Minolta "A"-type, self-lubricating stainless-steel bayonet; accepts all Minolta AF lenses for continuous lens control by automatic electronic-mechanical dedication

Autofocus system: Minolta's TTL phase-detection type with 8-bit microcomputer for direct, digital adjustment

Sensitivity range: EV 2 to 19 at ISO 100 in ambient light

Manual focusing: By referring to focus signals (LEDs) in viewfinder, or visually using Acute-Matte screen

Controls: Keys to set exposure mode, drive mode, exposure adjustment, and film speed; up/down keys to select speed, aperture and to control program shift; AE lock; program reset returns camera to P mode, S drive, and cancels exposure adjustment.

Shutter: Electronically controlled vertical-traverse focal-plane type

Auto speeds: Stepless 1/2000 to 30 sec. with nearest half-stop setting displayed

Manual speed: 1/2000 to 30 sec. in full-stop settings plus "bulb"

Film-speed settings: ISO 25 to 6400 in ambient light, ISO 25 to 1000 for TTL flash metering, both in 1/3-EV steps; auto film speed setting with DX-coded films

Metering: TTL center-weighted averaging type; by silicon photocell on pentaprism for ambient light; second SPC at bottom of mirror box for TTL flash metering with dedicated flash units

Auto-exposure (AE) range: EV -1 to 20 with ISO 100 film and 50/1.4 lens (e.g., 4 sec. at f/1.4 to 1/2000 sec. at f/22)

Exposure modes:

Program: Both shutter speed and aperture set according to AE program automatically selected by camera: Wide program for focal lengths shorter than 35mm, Standard for focal lengths from 35mm to 105mm, Tele for focal lengths longer than 105mm; program changes automatically when zooming from one range to another.

A: Aperture-priority AE; any available aperture selectable in half-stops, camera sets corresponding stepless shutter speed from 1/2000 to 30 sec.

S: Shutter-priority AE; any speed from 1/2000 to 30 sec. selectable in full stops, camera sets aperture from range available on lens

M: Metered-manual exposure; manual setting of any speed and aperture; correct exposure indicated in viewfinder

TTL flash metering: Operates in all flash modes with dedicated units

Program: Automatic setting of X-sync to 1/100 sec. (1/60 below EV 12) and aperture; automatic fill-in flash in bright sunlight

A: 1/100 sec. X-sync set automatically; any available aperture usable; AE lock enables slower X-sync speed through 30 sec. for balancing flash with ambient lighting

M: Any shutter speed 1/100 sec. or slower and all available apertures usable; speed automatically reset to 1/100 sec. at manually set speeds 1/125 sec. or faster

Exposure controls: Exposure adjustment EV +4 to -4 in half-stops; AE lock holds metered AE settings; program shift for temporary selection of other programmed aperture-shutter speed settings (in half-stops) for metered EV, shifted settings held as long as meter stays on.

Operating button: Touch Switch activates metering and LCD displays, which remain on for 10 sec. after finger is lifted from button;

pressing halfway activates autofocus and focus hold; pressing button all the way releases shutter

Film transport: Automatic with built-in motor drive: auto threading, auto advance to first frame, S mode for single-frame advance, C mode for continuous advance at up to 2 frames per second, power rewinding, auto rewind stop; advancing frame counter in data panel


Viewfinder: Eye-level fixed pentaprism shows 94% of 24 x 36mm film-frame area; magnification 0.85X with 50mm lens at infinity

Data displays:


Top panel: LCDs indicate exposure mode, program shift, shutter speed, aperture, exposure adjustment, film speed, frame number, drive mode, self-timer operation, "bulb" operation, low battery warning, over-/under-exposure warning

Viewfinder: LCDs indicate exposure mode, program shift, shutter speed, aperture, exposure adjustment, film speed, low

battery warning, whether light is within metering range, over-/underexposure warning; LEDs indicate focus status, if flash is charged, correct flash exposure; illuminated automatically in low light

Power: Four AAA-size 1.5v alkaline-manganese batteries power all operations; built-in lithium cell for memory back-up; low power indicated by blinking LCDs; sliding main switch: LOCK, ON, and  positions

Battery performance: With AAA-size alkaline-manganese (AM) batteries, 25 rolls of 24-exposure film; using optional Battery Holder BH-70L and AA-size AM batteries, 65 rolls, AA-size Ni-Cd batteries, 20 rolls

Audible beeper: At  position, camera beeps: when subject is in focus; at the end of the roll; during self-timer operation; and as a warning in P or A mode when shutter speed is below: 1/30 sec. with focal lengths shorter than 35mm, 1/60 sec. with focal lengths from 35mm to 105mm, and 1/125 sec. with focal lengths longer than 105mm.

Self-timer: Electronic with 10-second delay; cancellable; operation indicated by 3-stage blinking LED with simultaneous audible beeping and countdown in data panel.

Other: Front and rear handgrips, eyepiece cap, film window, remote control terminal, carrying strap

Size and weight: 52 x 91.5 x 138mm (2-1/16 x 3-5/8 x 5-7/16 in.), 555g (19-9/16 oz.) without lens and batteries

CARE AND STORAGE

- Always keep your camera in its case with the lens capped when not in use, or with a body cap on when a lens is not attached.
- No part of the camera should be forced at any time.
- Never subject your camera to shock, high heat, high humidity, water, or harmful chemicals. Be particularly careful not to leave it in the glove compartment or other places in motor vehicles where it may be subjected to high temperatures.
- Never lubricate any part of the camera body or lens.
- Never touch the shutter curtains or the front inside parts of the body or clean them with compressed air. Doing so may impair their alignment and movement.
- External camera surfaces and lens barrel — but not glass surfaces — can be cleaned by wiping with a dry or silicone-treated cloth.
- Never touch lens or eyepiece surfaces with your fingers. Whisk away loose matter with a blower brush. To remove stubborn spots, use a sheet of photographic lens tissue. If necessary,

tissue may be moistened with one drop of lens-cleaning fluid. Never drop fluid directly on glass surface.

- When storing camera for a long period of time, remove the batteries and keep it in a cool, dry place away from dust or chemicals, preferably in an airtight container with a drying agent such as silica gel.
- The operating range for the LCDs is from -20°C (15°F) to $+50^{\circ}\text{C}$ (120°F). At temperatures outside this range, response time and contrast will change, making displays difficult to read. At very high temperatures, display may temporarily turn black. In either case, display should return to normal after a short period of time.
- The LCDs should last approximately ten years. When replacement is needed, contact your nearest authorized Minolta service facility.
- Before using lenses, flashes, or other accessories made by companies other than Minolta, attach them to the camera and make sure they function properly by taking test photographs.

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Minolta (UK) Limited

Minolta Austria Gesellschaft m.b.H.

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